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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/768,361 | 01/25/2001 | Hiroki Kitagawa | 1359-1035 | 3649 |

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| EXAMINER | |
|---|---|
| STREGE, JOHN B | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2625 | |

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/768,361 | KITAGAWA ET AL. | |
| | Examiner | Art Unit | |
| | John B Strege | 2625 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *06 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *5-10* is/are withdrawn from consideration.

5)☒ Claim(s) *11-16,20 and 21* is/are allowed.

6)☒ Claim(s) *1-4 and 17-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## *Response to Amendment/Arguments*

In response to Applicant's amendment received on 11/06/04, all requested changes to the specification and claims have been entered.

Applicant's arguments with respect to claims 1-4, and 17-19 have been considered but are moot in view of the new ground(s) of rejection.

## *Examiner's Comment*

Claims 8 and 10 have been withdrawn from consideration based on the restriction requirement. However the status of the claims in the amendment does not reflect this. Appropriate correction is required.

## *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. USPN 6,181,805 (hereinafter "Koike").

Regarding claim 18, as seen in figure 1 the dictionary image input section 101 inputs a plurality of pictures of a person (recognition target) in M different orientations (different capturing environments) to organize them as dictionary picture groups (col. 3 lines 55-60). The N different captured images are sent to the facial region cut-out

section 102 where a window is cut out of each image (col. 3 lines 60-66). A feature point detection section 103 calculates the position (feature value) of the facial image and sends the information with the facial image to the dictionary storage unit 104 (col. 4 lines 1-14). A test image is then captured and a matching region is cut out of the test image as seen in numeral107a (col. 4 lines 40-45). The matching region is compared to the dictionary images in the similarity computing section (paragraph bridging col. 4-5). The object region detecting section selects the dictionary image (window picture) in which the degree of similarity of the matching is maximal (col. 5 lines 35-40).

Koike does not explicitly disclose that the window picture selecting selects a window picture in which variations in a feature value caused by a difference in a capturing environment are small, however as discussed does disclose that the dictionary image with the highest degree of similarity to the test image is selected. As the feature value is the location of the feature, it would be most similar to the test image when the difference between the location of the feature between the images is small. Thus it is obvious to one of ordinary skill in the art that by selecting the window picture by obtaining the highest degree of similarity one is finding the window picture where the differences in the capturing environment is small.

3. Claims 1-4, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koike et al. USPN 6,181,805 in view of Matsugu et al. USPN 6,463,176 (hereinafter "Matsugu").

As seen in figure 1 Koike discloses a picture matching process wherein a camera is adapted to take facial images in M directions or orientations of each of P persons and output the captured or acquired images to a facial region cut-out section 102 to form dictionary images (col. 3 lines 55-60)(corresponding to a window picture cutting part for cutting out a characteristic window picture group from previously captured pictures of a recognition target in different capturing environments). A test image is then captured and a matching region is cut out of the test image as seen in numeral107a (col. 4 lines 40-45). A similarity computing section 107 receives the matching region image and compares it to the N dictionary images (paragraph bridging col. 4-5)(corresponding to evaluating the influence of variations in the capturing environment of the cut out window picture group). The dictionary image window where the degree of similarity to the test image is maximal is selected and this window is used for picture matching (col. 5 lines 35-40)(corresponding to a window picture selecting part based on the results of the influence of variation in the capturing environments and picture matching is conducted using the selected window picture.

Koike does not explicitly disclose that the window picture selecting part selects a window picture in which the influence of variations in a capturing environment is at a predetermined level or less. However Koike does do a similar process of selecting a window picture by determining the degree of similarity between the variations of the environment and the test image. It is well known in the art of facial matching to select as a picture in which the variations are at a predetermined level or less which is a manner of selecting the images that are the most similar. Matsugu discloses an image

recognition processing in figure 1b in which the matching method involves computing the differences between the elements of the matching patterns and selecting patterns for which the difference is less than a predetermined threshold value (col. 5 lines 25-39, also see claim 1). This provides the advantage over Koike method in that there is less computation involved thus the processing is faster.

Koike and Matsugu are analogous art because they are from the same field of endeavor of facial matching.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine Koike and Matsugu to select a window picture in which the influence of variation in a capturing environment is at a predetermined level or less from among the cut out window picture group. The motivation for doing so is that it would make for less computations and thus speed up the processing. Thus it would have been obvious for one of ordinary skill in the art to combine Koike and Matsugu to obtain the invention as specified in claim 1.

Regarding claim 2, as discussed Koike discloses a recognition target picture region cutting part for detecting a recognition target picture region from each picture of the previously captured pictures of the recognition target, and setting the recgnition target picture region as a window picture in the cut out window picture group.

Regarding claim 3, as seen in figure 1 the variations in the capturing environment of Koike involve different directions or orientations.

Regarding claim 4, Koike displays the results of the window picture selection in figure 6 and discloses a position shifting section for moving the window.

Claim 17 is similar to claim 1 except claim 17 is a computer-readable medium, thus the same arguments applied for claim 1 apply equally to claim 17.

Claim 19 disclose similar limitations to claim 1 with the additional limitations pertaining to the feature values. Koike discloses a feature point detection section 103 calculates the position (feature value) of the facial image and sends the information with the facial image to the dictionary storage unit 104 (col. 4 lines 1-14). A test image is then captured and a matching region is cut out of the test image as seen in numeral107a (col. 4 lines 40-45). The matching region is compared to the dictionary images in the similarity computing section (paragraph bridging col. 4-5). The object region detecting section selects the dictionary image (window picture) in which the degree of similarity of the matching is maximal (col. 5 lines 35-40). Koike does not explicitly disclose selecting only a window picture in which a difference in a feature value is withing a predetermined threshold. The same reasoning for the combination of Koike and Matsugu used for claim 1 can also be applied to claim 19 to show that it is obvious to do so.

### *Allowable Subject Matter*

4. Claims 11-16, 20-21 are allowed as indicated in the previous Office Action.

### *Contact Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B Strege whose telephone number is (703) 305-

8679. The examiner can normally be reached on Monday-Friday between the hours of 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JS

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